

CLAIMS

What is claimed is:

- 1 1. A system for communicating with a remote communication unit via a
2 public switched telephone network (PSTN), comprising:
3 a personal data access device executing a program that is to communicate with the
4 remote communication unit via the PSTN;
5 a first radio frequency (RF) transceiver associated with the personal data access
6 device and in communication with the program, wherein the first RF transceiver is
7 controlled by the program;
8 a public, pay-type telephone, electrically connected for communication over the
9 PSTN;
10 a second RF transceiver interfaced with the telephone, the second RF transceiver
11 configured for communication, via an RF link, with the first RF transceiver; and
12 a controller interfaced with the telephone, responsive to communications received
13 from the first RF transceiver to communicate over a data communication link via the
14 PSTN to the remote communication unit designated by the personal data access device,
15 the controller being configured to allow data communications over the PSTN, the
16 controller and the program being further configured to maintain two-way communication
17 between the personal data access device and the remote communication unit via the
18 PSTN and the RF link, and the controller being further configured to terminate the data
19 communication link over the PSTN to the remote communication unit designated by the
20 personal data access device, wherein responsive to receiving from the first RF transceiver
21 a termination communication that originated from the program, the controller terminates
22 the data communication link.
- 1 2. The system as defined in claim 1, wherein the personal data access device
2 is a device selected from the group consisting of: a desktop computer, a laptop computer,
3 a hand-held computing device, a portable handset, and a palm-corder.

1 3. The system as defined in claim 2, wherein the portable handset digitizes
2 an analog voice signal into data packets, and the public, pay-type telephone relays the
3 data packets to the remote communication unit.

1 4. The system as defined in claim 1, further including:
2 a second public, pay-type telephone, electrically connected for communication
3 over the PSTN;
4 a third RF transceiver interfaced with the second telephone, the third RF
5 transceiver configured for communication, via an RF link, with the first RF transceiver;
6 and
7 circuitry associated with the first RF transceiver to monitor a signal link strength
8 of a current communication with the second RF transceiver and the signal link strength of
9 the third RF transceiver;
10 wherein the first RF transceiver is configured to transfer the current
11 communication to the third RF transceiver based on the signal link strength.

1 5. The system as defined in claim 1, wherein the controller and second RF
2 transceiver are interfaced to the public, pay-type telephone through an interface selected
3 from the group consisting of: a wired and a wireless connection.

1 6. The system as defined in claim 1, wherein the controller and second RF
2 transceiver are located outside the pay-phone in a separate module.

1 7. The system as defined in claim 1, wherein the public, pay-type telephone
2 includes a digital subscriber line (DSL) modem for communicating data between the
3 PSTN and the second RF transceiver.

1 8. The system as defined in claim 1, wherein the controller is further
2 configured to allow simultaneous voice and data communication over the PSTN.

1 9. A system for communicating with a remote communication unit via a
2 public switched telephone network (PSTN), comprising:
3 a personal data access device having a first radio frequency (RF) transceiver;
4 a communication device for communication over the PSTN;
5 a second RF transceiver interfaced with the communication device, the second RF
6 transceiver configured for communication with the first RF transceiver via an RF link;
7 and
8 a controller associated with the communication device, responsive to
9 communications received from the first RF transceiver to communicate over a phone line
10 via the PSTN and maintain two-way communication between the personal data access
11 device and the remote communication unit via the PSTN and the RF link, the controller
12 being configured to allow data communications over the PSTN and being configured to
13 terminate the communication between the personal data access device and the remote
14 communication unit, wherein responsive to receiving from the first RF transceiver a
15 termination message, the controller terminates the communication between the personal
16 data access device and the remote communication unit.

1 10. The system of claim 9, wherein the remote communication unit provides
2 access to a network, wherein the network is selected from the group consisting of: a wide
3 area network (WAN), a local area network (LAN), an Intranet, and the Internet.

1 11. The system of claim 9, wherein the first and second RF transceiver
2 communicate over the RF link using a protocol selected from the group consisting of:
3 single channel frequency hopping, multi-channel frequency hopping, and direct sequence
4 spread spectrum.

1 12. The system of claim 9, wherein the controller and second RF transceiver
2 are located outside of the communications device in a separate module.

1 13. The system of claim 9, further including a second personal data access
2 device having a fourth radio frequency (RF) transceiver;
3 wherein the second RF transceiver interfaced with the communication device is
4 configured to maintain communications with the second RF transceiver and the fourth RF
5 transceiver simultaneously.

1 14. The system of claim 9, wherein the first radio frequency (RF) transceiver
2 is integrated into a Personal Computer Memory Card International Association
3 (PCMCIA) card.

1 15. The system of claim 9, wherein the communications device is located
2 inside a stationary device, wherein the stationary device selected from the group
3 consisting of: an electric sign or a billboard.

1 16. The system as defined in claim 9, wherein the personal data access device
2 is a portable handset configured to transmit digitized voice signals between to the first RF
3 transceiver and the second RF transceiver.

1 17. The system as defined in claim 9, wherein the communications device
2 includes a digital subscriber line (DSL) modem for communicating data between the
3 PSTN and the second RF transceiver.

1 18. The system as defined in claim 9, wherein the controller is further
2 configured to allow simultaneous voice and data communication over the PSTN.

1 19. A method for retrofitting a public, pay-type telephone to provide wireless
2 data network services to totable computing devices via the public switched telephone
3 network (PSTN), the method comprising:

4 interfacing a low-power wireless transceiver with the public, pay-type telephone;
5 providing public access to the low-power wireless transceiver; and
6 enabling a totable computing device to communicate with the PSTN interface via
7 the low-power wireless transceiver.

1 20. The method of claim 19, further including the step of disabling
2 conventional voice communications on the public, pay-type telephone.

1 21. A system for communicating with a remote communication unit via a
2 public switched telephone network (PSTN), comprising:
3 a personal data access device executing a program that is to communicate with the
4 remote communication unit via the PSTN;
5 a first radio frequency (RF) transceiver associated with the personal data access
6 device and in communication with the program, wherein the first RF transceiver is
7 controlled by the program;
8 a communications device electrically connected for communication over the
9 PSTN;
10 a second RF transceiver interfaced with the communications device, the second
11 RF transceiver configured for communication, via an RF link, with the first RF
12 transceiver; and
13 a controller interfaced with the communications device, responsive to
14 communications received from the first RF transceiver to communicate over a data
15 communication link via the PSTN to the remote communication unit designated by the
16 personal data access device, the controller being configured to allow data
17 communications over the PSTN, the controller and the program being further configured
18 to maintain two-way communication between the personal data access device and the
19 remote communication unit via the PSTN and the RF link, and the controller being
20 further configured to terminate the data communication link over the PSTN to the remote
21 communication unit designated by the personal data access device, wherein responsive to
22 receiving from the first RF transceiver a termination communication that originated from
23 the program, the controller terminates the data communication link.

1 22. The system as defined in claim 21, wherein the communications device is
2 a device selected from the group consisting of: a node, a public pay-type telephone, a
3 telephone, and a DSL modem.

1 23. The system as defined in claim 21, wherein the controller is further
2 configured to allow simultaneous voice and data communication over the PSTN.

1 24. A method for providing wireless data network services to a totable
2 computing device via a public switched telephone network (PSTN), the method
3 comprising:
4 linking a low-power wireless transceiver to the PSTN interface;
5 providing public access to the low-power wireless transceiver; and
6 enabling the totable computing device to communicate with the PSTN interface
7 via the low-power wireless transceiver.

1 25. The method of claim 24, further comprising receiving compensation from
2 a user of the totable computing device for enabling the totable computing device to
3 communicate with the PSTN interface via the low-power wireless transceiver.

1 26. The method of claim 24, further comprising providing access to the
2 Internet through the PSTN interface.